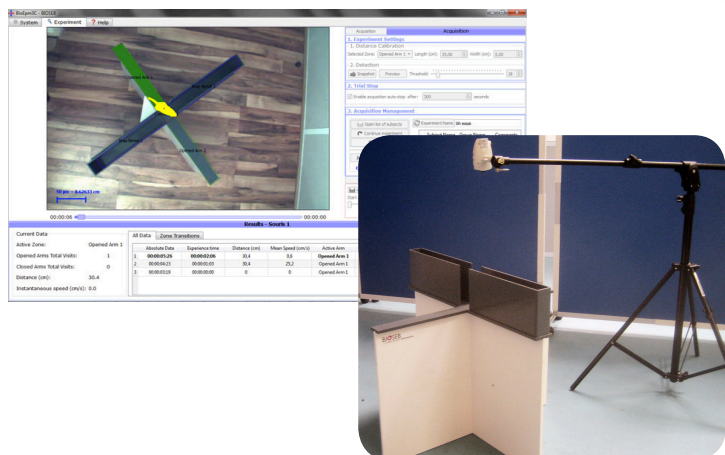


A COMPLETE, DEDICATED & AUTOMATED SOLUTION FOR THE ELEVATED-PLUS OR ZERO MAZE TEST



BIO-EPM3C

Elevated-Plus-Maze

INSTRUMENT OVERVIEW

The Elevated-Plus-Maze is a common test to assess anxiety-like behavior in laboratory animals. Based on the natural fear of rodents for height and open spaces, it is a general research tool in neurobiological anxiety field, usually used to screen the efficacy of drugs.

The Elevated-Plus-Maze is one of the first tests used by neuroscientists to evaluate anxiety-like behavior in rodents and the most widely used after the Open Field to evaluate anxiolytic/anxiogenic effects. The EPM could also be considered for the screening of mice strains. The EPM can also be used to assess side effects of psychiatric disorders treatments.

Bioseb proposes an all-inclusive solution for the Elevated-Plus-Maze test with hardware and software components.

Video tracking is a very good way to automate the Elevated-Plus-Maze test, which is why we designed the EPM-3C, a dedicated software, to run any EPM protocol (compatible with Bioseb hardware or other brands), based on a **powerful video tracking system**. Zone transition is matched perfectly with manual scoring by using specific morphologic detection. The tracking zones (open/closed arms, center) are easy to define, and the software is optimized to be **set up easily and starts with just three clicks**, in order to assist, speed up and simplify your experiments.

Regarding the hardware, we designed its EPM maze for mice and rats according to the standard dimensions widely used in the field. The corridors of our Elevated-Plus-Maze are made in high quality perpeX, so that the material will not retain odors. Their light grey, non-reflective color makes them ideal to combine with video-tracking. Finally, the assembly of the equipment has been made really easy.

Tripod and industrial quality camera are also provided so **you can start your experiments rapidly**.

HOW DOES IT WORK?

The new EPM-3C solution from BIOSEB features **unprecedented simplicity to run ELEVATED + MAZE protocols**.

The test setting consists of a plus-shaped apparatus with two open and two enclosed arms, each with an open roof and elevated from the floor. The aversion of the rodents to open spaces leads into a restriction of movement to the enclosed arms.

Anxiety of rodents is directly linked to the proportion of time spent in closed arms versus the time spent in open arms. The more anxious the animals, the more time they spend in the closed arms.

To start the test, the animal is usually placed in the center zone of the maze and the duration of the experiment is generally about 5 minutes. The **time spent in the various arms** is the main data recorded during this test. The Bioseb software also gives the total number of entries in the various arms (open, closed and center), the global activity of the animal (calculated with the total distance of the animal during the test) and the latency of the first entrance to the open arm.

Your results can then be exported into Excel tables for further analysis.

KEY FEATURES

- Easy to set up
- Designed for Rats or Mice
- Hundreds of publication & validation for the EPM test
- The first choice for anxiety
- Modular structure allows storage in minimum space
- Short-lasting experiment (no more than 5-10 min)
- Exploration-based conflict task
- Based on innate behavioral tendencies (ethological test)



BIO-EPM3C: Elevated-Plus-Maze System: 3 clicks only!



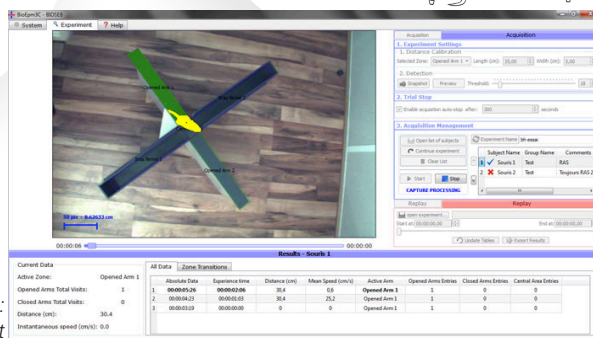
DEDICATED SOFTWARE

The **Bioseb EPM-3C Software** gives all the information you need from your EPM experiment and most of the **parameters are computed in real-time**.

The data is available for each arm individually, but also for grouped arms. The results **can be exported to windows Excel** - the software runs under Windows Seven and Eight.

Following table introduces the results available with the Bioseb software and the scientific meaning of each data.

Bioseb's EPM-3C software:
Screenshot



Parameters measured	Scientific significance
Total time per zones (s and %)	Main indicator to assess anxiety
Latency to first entry per zone	Latency to first entry in open arms is another indicator to assess the anxiety of the animal
Visit (and % per zones)	Number of visits (or entries) in open arms is an indicator to assess the anxiety of the animal
Distance (cm and % per zones)	Distance covered by the animal is a good indicator of the animal activity during the test
Mean time per visits (s)	Mean time per visits in open arms can also be used as an indicator for anxiety
Mean speed (cm/s)	Speed of the animal is another indicator to assess the locomotor activity of the animal

DOMAINS OF APPLICATION

- Prescreening of newly developed pharmacological agents for treatment of anxiety-related disorders
 - Anxiolytic and anxiogenic effects of pharmacological agents, drugs of abuse and hormones
 - Study of the effects of reproductive senescence/aging and/or pre-, peri- or postnatal exposure to various stressors
 - Model to detect anxiolytic effects of benzodiazepine-related compounds
 - Behavioral assay to study the brain sites (e.g., limbic regions, hippocampus, amygdala, dorsal raphe nucleus, etc.) and mechanisms (e.g., GABA, glutamate, serotonin, hypothalamic-pituitary-adrenal axis neuromodulators, etc.) underlying anxiety behavior
- and much more...*

HIGHLIGHTED BIBLIOGRAPHY Exhaustive list on our website



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TECHNICAL SPECIFICATIONS

Technology	Color tracking
Analysis	Real-time from camera flow or video file
Camera (included)	HD USB based / Resolution : 744x480 pixel / Sampling rate : 76 fps
Dimensions (in cm)	For mice: Central zone 5x5 / Arms 75x5 ; For rats : Central zone 10x10 / Arms 110x10
Weight	For mice : 7.5 kg / For rats : 26.5 kg
Material	High-quality perspex in non-reflective grey, suitable for video-tracking

ORDERING INFORMATIONS

Reference	Description
BIO-EPM3C	Software, camera & tripod

Reference	Description
BIO-EPM-R	Elevated-Plus-Maze for Rats
BIO-EPM-M	Elevated-Plus-Maze for Mice

FOR MORE INFORMATION, VISIT OUR WEBSITE: WWW.BIOSEB.COM/VETALGO

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